IMPLIFIED LESSONS IN CARE OF AUTOMOBILE

xpert Guerrlich Concludes Lecture on Subject of Trouble-Locating.

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Lecture No. 202.

If your engine misses, find out why nd correct the fault immedia.ely. unning a car with a missing engine eans a very severe strain on all the arts of it.

When the engine misses the first ing to do is to find out which cylin- er is missing. This can best be done y making the cylinders miss one fter the other, by short-circuiting he spark plugs. Thus, if you were o short-circuit the spark plug of ylinder No. 1, you would prevent the park, and if the cylinder was not issing before it will now miss, and he missing of the engine will be oubled. On the other hand, if No. cylinder was missing, you could not ake it miss, and there will be no hange in the running of the engine. o if you short-circuit the plugs one fter the other you will finally come o one which, when short-circuited, ill not cause the engine to run dif- erently than before. This is the issing cylinder.

How to Short-Circuit Plug.

The illustration shows how to hort-circuit the plugs. By touching screw driver to the plug and the ground," as shown, the current will o through the screw driver and not hrough the plug, and so there will ot be a spark.

Of the three essentials, ignition or ompression are generally the cause f missing.

I told you that a fault in the prim- ry circuit is liable to be the cause f an engine suddenly stopping, and hat the secondary circuit was un- likely to be at fault. With a miss, he reverse is true, as if the primary ircuit fails, it will cause a failure of the spark in all the cylinders and ot in one only.

What are the units in the secondary ircuit? The coil, distributor and park plugs. More than 50 per cent of the time a miss is due to a de- ective spark plug.

The way to proceed then, when your ngine misses, is to locate the cylin- er which is missing, and then take he lead (wire) off the plug and hold t a short distance from the metal of he engine. If you get a spark, take out the plug and either replace or horoughly clean it and reset the oints and see if the miss disap- pears. If the miss does not disappear, hen you must expect that loss of compression is the cause.

If you do not get a spark when ou test the lead, the trouble is prob- ably due to the lead being short-cir- cuited. In most of our cars, these eads, for neatness sake, are carried n a shield or casing, and, due to the vibration of the car, the insulation often is worn off where the lead en- ers or leaves this casing. An exam- nation will show this, and a tem- porary repair can be made by wrap- ping the wire with insulation tape.

Loose Wire May Be Trouble.

A loose primary wire, pitted or im- properly set interrupter points will often cause a miss, but the miss will generally be irregular; that is, first in one cylinder and then in another, or perhaps every four or five revolu- tions.

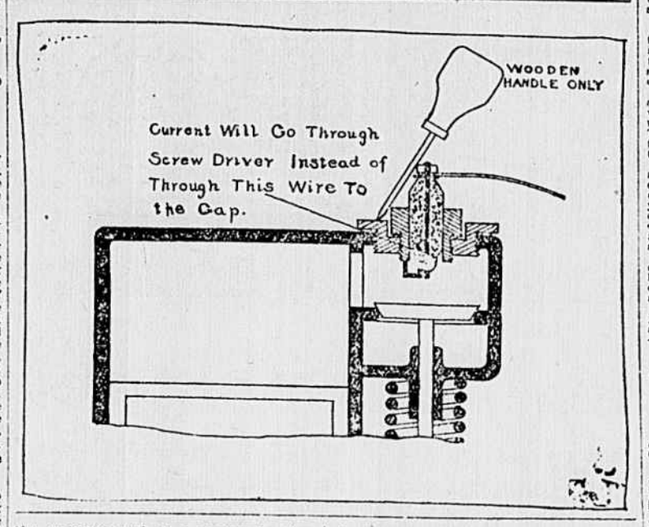
Ignition being O. K. we must ex- pect loss of compression to be the trouble. To see if you have loss of compression to any extent in the missing cylinder, open all of the com- pression cocks, and then close one on one of the hitting cylinders. If you will then slowly crank the engine you will be able to feel the compression in this "good" cylinder. Now, if you open this compression cock and close that on the missing cylinder, you will be able to compare the com- pression in it to that of the former cylinder.

Having determined that compres- sion is at fault, first test the valve caps and spark plugs by pouring oil about them and watch for the bub- bling, as explained before. Next see if the valve adjusting nut is not up too tight, as it may have worked up. Next see that the valve is not stick- ing and that the valve spring is not broken.

This failing to show a fault, the valves need grinding, or the piston rings are leaking. As a rule, you will know whether or not the valves need to be ground, as this must be done in the neighborhood of every 1,000 miles of running. When the piston rings of one cylinder leak, you will hear a sort of muffled hissing sound when climbing a hill.

A bad mixture will cause a miss, but the miss is generally an irregular one. The adjustment of the carbure- tor is liable to be the cause, but if your adjustments were right yester- day, they will be right today, unless they have been tampered with. Un- less you feel sure that the adjust- ments are wrong do not touch them. The adjustment will have to be a little different in the winter than in the summer and on a mountain than in a valley.

Trouble Locating



QUESTIONS AND ANSWERS

Q. Am contemplating the construction of an engine 6x5 cylinder or eight-inch stroke, for use on a tractor, figuring on making, say, 600 to 1,000 R. P. M. Can an engine of this size make that many revolutions with safety to itself.

Would it be advisable to have a worm on the jack shaft when using a single-cylinder high-speed engine?

The inside of this engine cylinder would be six inches and the distance be- tween the top of piston and the cylinder head when the piston is down would be eight inches.

What horsepower could be developed by this size engine? M. Y.

A. One thousand R. P. M. is a fairly high speed for a single-cylinder engine of the dimensions given, but if well- designed and built I can see no reason why an engine of this speed and dimen- sions would be unpractical. Such an engine would have to be extremely well designed.

Authorities differ as to the advantages of the worm over the bevel drive, and as the writer cannot recall having seen the results of tests on a worm when used with a single-cylinder engine, he cannot express an opinion on the merits of the one over the other.

You say the engine is to be eight-inch stroke. As the stroke is the distance the piston travels, the distance between the cylinder head and the top of the piston when down will have to be eight inches plus the compression space which space must be calculated.

A rough guess at the horsepower of an engine of the size mentioned would be twelve to fourteen, depending on the design.

Q. My car skids very easily when I put on my brakes. It does it more than other cars do. Please tell me if there is something wrong? C. C. J.

A. Your brakes probably are not prop- erly adjusted. The one holding more than the other. Jack up both rear wheels and readjust the brakes so that both wheels lock at the same position of the pedal or lever. They may need to be relined.

Q. My new (——) car makes a lot of noise when I am in first or second. The service station fellows say that it is all right, but I don't think so. What do you advise me to do? A. K. I.

A. A large per cent of the transmission gears grow when run in first or second, even in the highest-priced cars. Try using a little flake graphite in the grease or oil of the transmission.

Q. Will you please tell me if I can use a storage battery for the lights of my Ford car? Can I have the battery charged from the magneto in some way? F. G. M.

A. You cannot charge a storage bat- tery from a magneto as it requires a direct current to charge a battery, and the magneto is an alternating-current ma- chine. A storage battery without means for charging does not, as a rule, give satisfaction, and I would not advise its use.

Q. I am much annoyed because of a squeak in my car. I greased the leaves of my springs, but still I have the squeak. Where can this squeak be?

J. J. P.

A. Go over all the bolts on your car and tighten them up. Especially the fender, body and demountable rim bolts. See that the license number plate is not swinging as this very often is the cause of a squeak.

Q. I have a 1915 (——) car. All summer I have had to run it quite a while before going out so as to warm it up. It acts just as in the winter time. This is very annoying, so will you please tell me what might be the cause, and the remedy? C. H. A.

A. The low-grade gasoline which we are now getting and the fact that your car has a rather long manifold are the causes of your car acting as it does. If you can get more heat to the carbureter or manifold either from the exhaust pipe or water, it would help. Do not use any attachments which will lengthen the manifold.

Q. The carbureter of my 1915 (——) car leaks when the car is not running, but not when it is running. I must shut off the gas at night. The carbureter is a (——).

A. There is something the matter with your float or float valve. There may be a leak in the float. Dirt may have got- ten under the needle of the float valve. The lever for priming by floating the carburetor may be sticking.

Q. My 1918 (——) runs fine until I get to about thirty miles an hour, when it begins to miss a lot. I have tried to find the cause of this and have had the car in a local repair shop, but I cannot find the trouble. Can you make a suggestion of what might be the trouble? R. W. Mc.

A. I am inclined to believe that your interrupter points are set a little far apart, or that the spring which closes the points is weak. It is possible that at the high speed the points miss making contact. You may have a loose primary wire.